CLAIM AMENDMENTS

1-19. (Canceled)

20. (Original) A method of determining the effect of a gas of interest on a product within a package comprising the steps of:

a. obtaining data representing the package's total transmission of a test gas, said test gas being different than said gas of interest;

b. determining the package's transmission of the gas of interest based upon its test gas transmission;

c. obtaining storage condition data representing the amount of the gas of interest in the atmosphere surrounding the package during storage; and

d. obtaining data representing the sensitivity of the product to the gas of interest and determining the shelf life of the packaged product based upon the package's gas-of-interest transmission, the storage condition data, and the product sensitivity data, or obtaining data representing the shelf life of the packaged product and determining the sensitivity of the product to the gas of interest based upon the package's gas-of-interest transmission, the storage condition data, and the shelf life data.

21. (Original) A method of determining a packaging material specimen's permeation of a gas of interest comprising the steps of:

a. obtaining data representing the specimen's permeation of a test gas, said test gas being different than said gas of interest;

b. obtaining correlated test gas permeation data and gas-of-interest permeation data pertaining to the packaging material of which the specimen is made; and

c. determining the specimen's gas-of-interest permeation based upon its test gas permeation data and said correlated data.

22. (Original) The method of claim 21, wherein the specimen's gas-of-interest permeation P_X is determined as $P_X = P_T (p_X/p_T)$ where p_T is the packaging material test gas permeability, p_X is the packaging material gas-of-interest permeability, and P_T is the specimen's test gas permeation.

23. (Original) The method of claim 21, wherein said test gas is helium.

24. (Original) The method of claim 21, wherein said gas of interest is oxygen, water vapor, or carbon dioxide.

25. (Original) Apparatus for determining a packaging material specimen's transmission of a gas of interest, comprising stored data and a processor operating on said stored data in accordance with software, wherein said stored data includes test gas permeation data representing the permeation of a test gas through the specimen and permeation correlation data correlating the permeation of a gas of interest through the packaging material with the permeation of the test gas through the packaging material, and said processor operates on said test gas permeation data and said permeation correlation data to determine the permeation of the gas of interest through the specimen.

26. (Original) The apparatus of claim 25, wherein said data pertaining to a test gas pertains to helium.

27. (Original) The apparatus of claim 25, wherein said data pertaining to a gas of interest includes data pertaining to oxygen, water vapor, or carbon dioxide.

28. (Original) The apparatus of claim 25, wherein said stored data includes data correlating the permeation of a plurality of gases selectable as a gas of interest with the permeation of one or more gases selectable as a test gas.